

## **REMARKS**

Applicant thanks the Examiner for the very thorough consideration given the present application. Claims 1 through 28 are currently pending in the application. Claims 1 and 4 have been amended. Bases for the amendments can be found throughout the specification, claims and drawings as originally filed and as such, no new matter has been presented. The Examiner is respectfully requested to reconsider and withdraw the objections and rejections in view of the above amendments and remarks set forth below.

### **Amendments to the Drawings, Specification and Claims**

The Examiner has objected to the drawings for failing to show reference numerals 53 and 60, which are associated with a controller and a horizontal stabilizer, respectively.

Enclosed please find two sheets of drawings with proposed corrections marked in red. Support for the changes can be found in the application as originally filed and as such, no new matter has been added. Applicant therefore submits that the objection to the drawings has been rendered moot.

The Examiner has objected to the specification for various informalities. Applicant has not amended page 6 as suggested by the Examiner, since the use of the word "planform" is correct. Applicant notes that the word "planform" refers to the shape of the wing when the wing is viewed from the top (i.e., a plan view) and that the word "planform" is well known in the art.

Applicant, however, has amended the specification in the manner suggested by the Examiner to cure the informalities that were noted by the Examiner as occurring on pages 12 and 17.

The amendment to Claim 1 has been entered to clarify that the dimensions relate to the size of the fuselage rather than the central storage cavity and the amendment to Claim 4 has been entered to clarify the direction in which the wing assembly droops. Applicant submits that basis for the amendments can be found throughout the specification and drawings as originally filed and as such, no new matter has been added.

### **Claim Rejections Under 35 U.S.C. §103**

The Examiner has rejected Claims 1 through 8, 12, 13, 20 through 22 and 25 through 28 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,010,817 to Henry. The Examiner has rejected Claims 9 through 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,010,817 to Henry in view of U.S. Patent No. 5,335,742 to Blum. The Examiner has rejected Claims 14 through 19 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,010,817 to Henry in view of U.S. Patent No. 5,850,990 to Gevers. The Examiner has rejected Claim 23 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,010,817 to Henry in view of U.S. Patent No. 3,653,615 to Spence. The Examiner has also rejected Claim 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 2,010,817 to Henry in view of U.S. Patent No. 5,759,005 to Roessner et al. These rejections are respectfully traversed.

As the Examiner knows, the establishment of a *prima facie* case of obviousness requires 1) a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, 2) a reasonable expectation of success, and 3) the prior art reference or references must teach or suggest all the claim limitations. See, e.g., MPEP §2143.

Applicant respectfully submits that the Examiner has not set forth a *prima facie* case of obviousness. For example, the Henry reference fails to teach or suggest a wing assembly that defines a pair of wing storage cavities that are configured to receive a cargo that includes intermodal re-usable cargo containers. Rather, Figures 4, 10 and 11 of the Henry reference illustrate that neither of its wings includes a cargo-carrying compartment. While each of the wings of the Henry reference do include a compartment (27), these compartments are employed to house a fuel tank (28) that is used to supply fuel to the aircraft engine and as such, do not constitute cargo carrying compartments.

As another example, the Henry reference fails to teach or suggest a wing assembly having a moderate aspect ratio of at least 3.5 to permit the aircraft to be flown efficiently in and out of ground effect. As noted on page 3, column 1, lines 64 through 74, the Henry reference utilizes a "fat wing"; no reference to an aspect ratio is made in the Henry reference and no other reference is made to the relationship between the length and the width of the wings. Accordingly, it appears that the rejection under Section 103 is based in large part on the Examiner's personal knowledge.

As the Examiner knows, the Examiner's ability to use personal knowledge is qualified by 37 C.F.R. 1.107, which states:

When a rejection in an application is based on facts within the personal knowledge of an employee of the Office, the data shall be as specific as possible, and the reference must be supported, when called for by the applicant, by the affidavit of such employee, and such affidavit shall be subject to contradiction or explanation by the affidavits of the applicant or other persons.

Applicant, therefore, respectfully requests that the Examiner provide an affidavit supporting the Examiner's position that the "fat wing" of the Henry reference teaches or suggests a wing with an aspect ratio of at least 3.5.

As a further example, the Henry reference fails to teach or suggest an altitude control system for controlling the altitude of the aircraft when the aircraft is flown in ground effect which maintains the aircraft at about a predetermined altitude above a surface over which the aircraft is traveling. Applicant notes that page 2, column 2, lines 8 through 14 of the Henry reference states:

"Because of the foregoing, the new airplane can be flown at low altitudes and yet high speeds from port of departure to port of destination; thereby avoiding fog and storm areas, precluding ice formation on lift surfaces, and enhancing the attractiveness of the voyage by having the sea and its ships always in view."

While the Henry reference states that low altitude flight is possible, no mention is made in the Henry reference of flying in ground effect. Furthermore, the Examiner has not explained how this paragraph "teaches" an altitude control system that maintains the altitude of the aircraft at or about a predetermined altitude when flying in ground effect.

As yet another example, the Henry reference does not teach or suggest a plurality of independent and steerable landing gear. No mention of "steerability" is made in the Henry reference and the illustrations included therein illustrate the wheels of the aircraft as being mounted in a fixed, non-steerable position. Even if the wheels of the aircraft disclosed in Henry reference were to be steerable, Applicant notes that they would not be "independent and steerable" and thus would not teach or suggest the present invention.

Applicant further submits that the Examiner's analysis of information "disclosed as prior art in the applicant's specification" is either incorrect or ambiguously stated. For purposes of clarification, Applicant notes that the specification of the present application states only that intermodal reusable cargo containers are commonly used in the transport of cargo and that such containers are known to be used in cargo transport that utilizes ocean-going ships.

Applicant further notes that the Examiner contends that the numerical values associated with the fuselage and wing assembly of Applicant's invention would have been obvious to one having ordinary skill in the art at the time of Applicant's invention. In this regard, the Examiner appears to be contending that the present invention could be obtained through simple enlargement of the Henry aircraft, despite significant structural differences between the present invention and the Henry aircraft.

As the Henry reference lacks any discussion regarding the overall size of the aircraft, it would appear that the viability of enlargement is based solely on the Examiner's personal knowledge. As noted above, the Examiner's ability to use personal knowledge is qualified by 37 C.F.R. 1.107. Applicant, therefore, respectfully requests that the Examiner provide an affidavit supporting the Examiner's position that simple enlargement of the Henry aircraft would produce the present invention.

In view of the above, Applicant submits that the Examiner has not set forth a *prima facie* case of obviousness. Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of Claim 1 under 35 U.S.C. §103.

Applicant notes that "if an independent claims is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d

1596 (Fed. Cir. 1988). Accordingly, Applicant submits that Claims 2 through 28 are also in condition for allowance for at least the reasons set forth for Claim 1, above. Additionally:

regarding Claim 4, the wings of the Henry aircraft do not droop in a lateral direction;

regarding Claims 7, 12 and 13, Figure 2 of the Henry reference illustrates the top of the aircraft and as such does not pertain, teach or suggest anti-suck down features or shapes;

regarding Claim 8, Figure 3 of the Henry reference clearly illustrates a wing configuration with a curved-bottom airfoil rather than a flat-bottomed airfoil;

regarding Claim 20, Applicant notes that the Henry reference was filed in 1932, but the first aircraft having a pressurized cabin didn't exist until 1938 - Applicant therefore submits that the Henry reference lacks a pressurized cabin;

regarding Claims 21 and 22, none of the landing gear illustrated in the Henry reference appear to be independent and steerable;

regarding Claim 25, Figure 6 of the Henry reference does not illustrate an aircraft having an aft T-tail; and

regarding Claims 27 and 28, the Henry reference does not disclose a wing construction having upper and lower wing panels that intersect a central storage cavity and cooperate with a pair of floor structures to segregate the central storage cavity into an upper fuselage storage cavity and a lower fuselage storage cavity.

### **CONCLUSION**

All of the stated grounds of objection and rejection have been properly traversed, accommodated or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding office action, and as such, the present application is in condition for allowance. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned attorney at (248) 641-1600.

Prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,



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## APPENDIX FOR AMENDMENTS TO CLAIMS

U.S. Serial No. 10/055,411  
Inventors: Hoisignton et al.

Filed: October 29, 2001  
HD&P Docket No. 7784-000244

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The claims have been amended as follows:

1. (Amended) An aircraft comprising:

a fuselage defining a central storage cavity, the fuselage having a length of at least 100 feet, a height of at least 16 feet and a width of about 24 feet;

a wing assembly extending through and fixedly coupled to the fuselage in an unswept manner and providing the aircraft with a wingspan of at least 300 feet, the wing assembly defining a pair of wing storage cavities each of which being located on an opposite side of the fuselage, the wing assembly having a moderate aspect ratio of at least 3.5 to permit the aircraft to be flown efficiently in and out of ground effect;

an altitude control system for controlling the altitude of the aircraft when the aircraft is flown in ground effect, wherein the altitude control system is operable in an active mode for maintaining an altitude of the aircraft at about a predetermined altitude above a surface over which the aircraft is traveling; and

a plurality of independent and steerable landing gear coupled to the fuselage and operatively distributing the weight of the aircraft over a predetermined area;

wherein the central storage cavity and the wing storage cavities are configured to receive a cargo that includes intermodal re-usable cargo containers.

4. (Amended) The aircraft of Claim 1, wherein at least a portion of the wing assembly droops downwardly in a laterally outward direction, the laterally outward direction being taken from the fuselage to an associated tip of the wing assembly.

## APPENDIX FOR AMENDMENTS TO SPECIFICATION

U.S. Serial No. 10/055,411  
Inventors: Hoisignton et al.

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Paragraph [0036] which begins on page 12 has been amended as follows:

[0036] In contrast to the configuration of the illustrated embodiment, the idealized wing for this embodiment intersects the fuselage at a relatively low point so that the wing assembly is able to operate as close to the surface of the ground as possible. As the propulsion system 16 for the illustrated embodiment is best configured with propellers 96 since ground effect flight dictates moderate cruise speeds, the use of wing-mounted nacelles 98 would cause the propellers 96 to extend below the wing surface and would become the lowest part of the aircraft. This would reduce the ground-effect benefit, since the aircraft would have to be flown at a higher altitude in order to maintain an acceptable level of ground clearance to the lowest point of the aircraft (i.e., the propellers). Alternatively, pylons could be employed to mount the nacelles above the wing assembly, but as those skilled in the art will readily understand, the use of pylons exacts a significant penalty, both in terms of weight and in aerodynamic performance.

Paragraph [0047] which begins on page 17 has been amended as follows:

[0047] The engines 120 may be coupled to the propeller cluster 124 through a transmission 128 through an appropriate means, such as a gearbox, [which provides] to provide a rotational input to the propeller cluster 124 as illustrated in Figure 11 [to thereby permit]. Configuration in this manner permits the engines 120 to be selectively uncoupled from the engines 120 as necessary so that the engines 120, when stopped, will not interfere with the rotation of the propellers 96. In this embodiment, the engines 120a and 120b are coupled to the transmission 128 via discrete clutches, such as clutch 130a and 130b, respectively. The transmission 128 is shown to include a pair of input shafts 134a and 134b and an output shaft 136. The clutch 130a is coupled to the output shaft 138a of the engine 120a and to the input shaft 134a of the transmission 128. The clutch 130a is operable in a first condition for transmitting a rotary output from the engine 120a to the input shaft 134a,



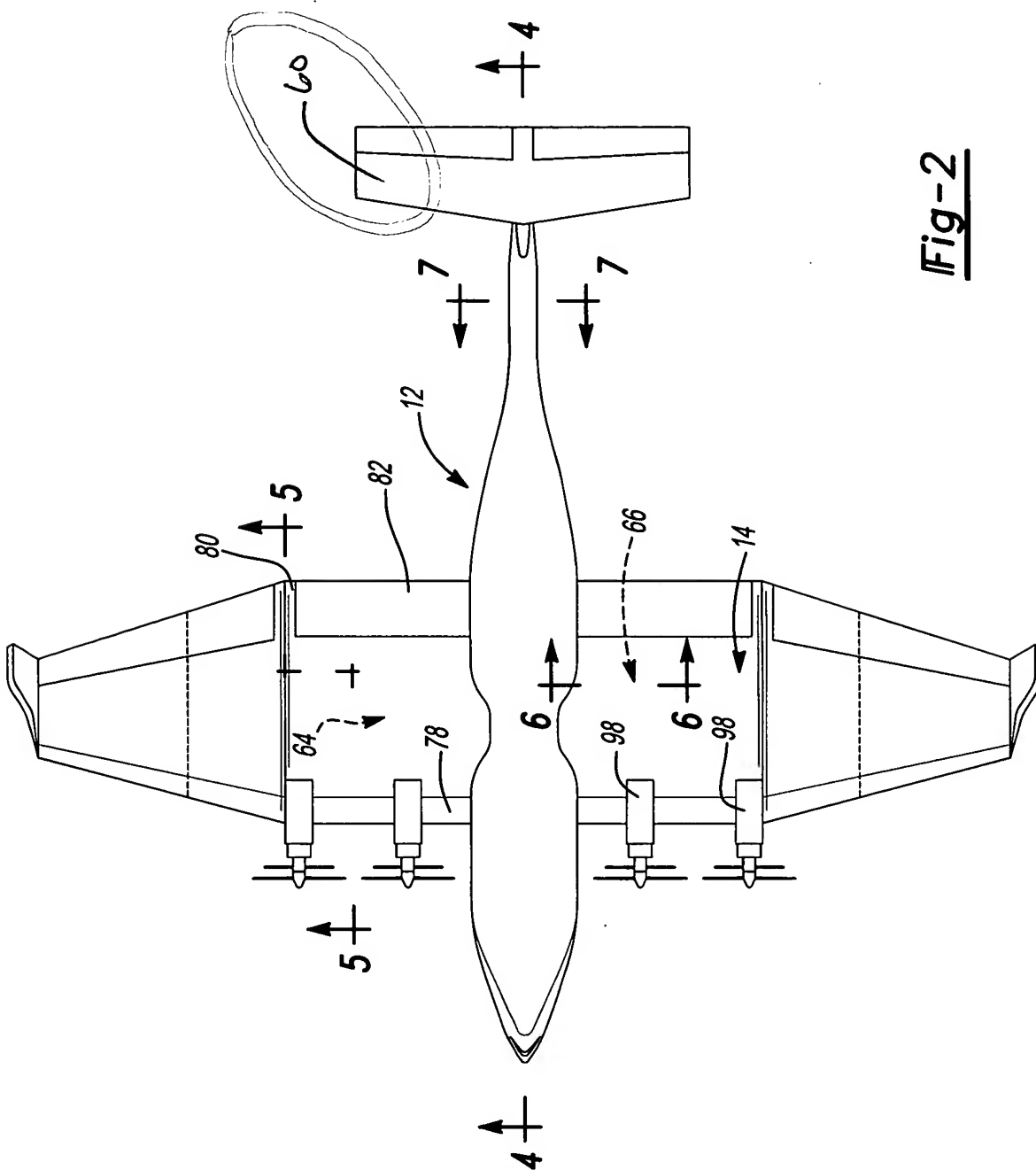
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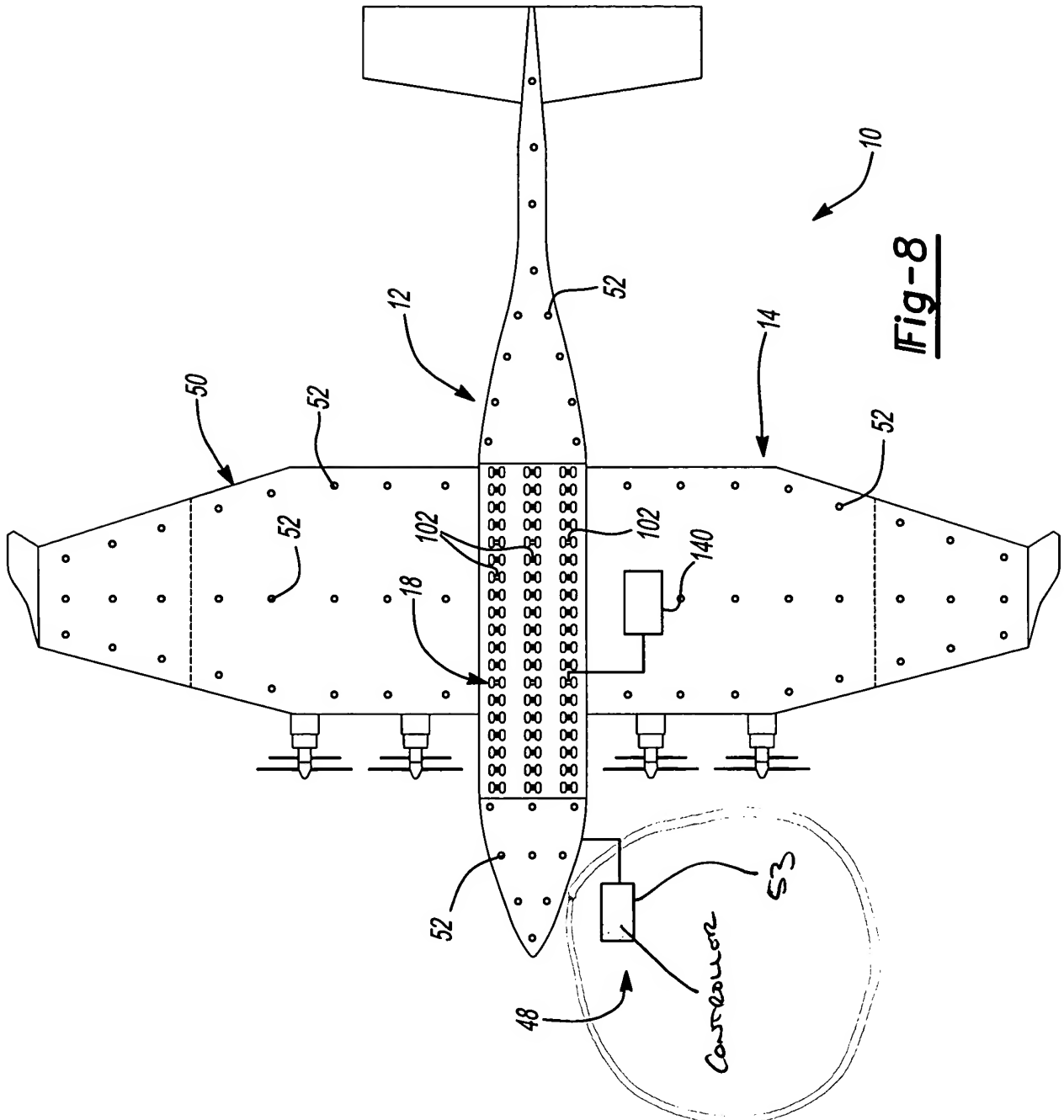
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and a second condition in which the output shaft 138a of the engine 120a and the input shaft 134a are not rotatably coupled (i.e., the output shaft 138a of the engine 120a and the input shaft 134a may rotate independently of one another). The clutch 130b similarly selectively couples the output shaft 138b of the engine 120b and the input shaft 134b to one another. The transmission 128 is operable for combining the rotary inputs from the input shafts 134a and 134b and transmitting a rotary output to the propeller cluster 124. In the particular embodiment illustrated, the transmission 128 includes a gearset that provides an appropriate level of speed reduction and torque multiplication.



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